Theory of Public Finance in a Federal State

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CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK   www.cup.cam.ac.uk
40 West 20th Street, New York, NY 10011-4211, USA   www.cup.org
10 Stamford Road, Oakleigh, Melbourne 3166, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain

First published 2000

Printed in the United States of America

Typeface Times 10/12 pt.   *System* AMS-TEX   [FH]

A catalog record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Wellisch, Dietmar.
Theory of public finance in a federal state / Dietmar Wellisch.
p.   cm.
Includes bibliographical references and index.
ISBN 0-521-63035-5 (hb)
1. Intergovernmental fiscal relations.   2. Finance. Public.
3. Decentralization in government.   4. Federal government.
I. Title.
HJ197.W454   1999
336 – dc21   99-22729
CIP

ISBN 0 521 63035 5 hardback

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CHAPTER 1

Fiscal Decentralization: Benefits and Problems

Active tax competition, in short, tends to produce either a generally low level of state–local tax effort or a state–local tax structure with strong regressive features. George Break (1967)

The mobility of individual economic units among different localities places fairly narrow limits on the capacity for local income redistribution.
Wallace Oates (1977)

Policies that promote residential mobility and increase the knowledge of the consumer–voter will improve the allocation of government expenditures in the same sense that mobility among jobs and knowledge relevant to the location of industry and labor improve the allocation of private resources.
Charles Tiebout (1956)

If jurisdictions compete with each other and taxpayers/consumers are able to vote with their feet, there may be fairly strong pressures for subnational governments to respond to the wishes of the electorate.
Charles McLure, Jr. (1986)

1.1 Assignment of Government Functions and Mobility

1.1.1 Assignment of Government Functions

Issues of public finance appear in a new light when an economy is divided into several regions. If a state consists of many jurisdictions, the question arises of how to assign the various government activities to different governmental levels. The general functions of the government – to support an efficient allocation of scarce resources (where the private sector fails to do so) and to guarantee a fair income distribution – must first be divided into several components. Once a fundamental line of government policy is chosen, these functions must be assigned to the jurisdictions. However, such an assignment cannot be made once and for all; it critically depends on the economic environment that characterizes the federal state.

A substantial increase in interregional mobility, which we can observe today in many federal states, changes the economic environment in an important way. For the problem of decentralizing government activities, mobility across regions is a critical factor. This can be illustrated by considering the use of a head tax. In a unitary state, the head tax does not distort economic decisions and is therefore, leaving distributional problems aside, an ideal instrument for financing government expenditures from an efficiency viewpoint. If, however, households are mobile across the regions of a federal state then any uncoordinated use of head taxes by regional governments causes pure fiscal incentives to relocate, leading to migration distortions.

The question of an optimal assignment of government functions to several governmental levels does not arise only in long-established federal states. It is also relevant when independent states grow together. For example, the member states of the European Union (EU) want to appropriate the benefits of the international division of labor. They committed themselves to abolish any borders among them on January 1, 1993, and to guarantee the *four fundamental economic liberties:* goods, services, capital, and labor can now move freely among all member countries without any legal obstacles.[1] Although this right reflects a de jure rather than a de facto freedom of movement in Europe, the European countries grow more and more together and will form an economic unit. Today and in the immediate future, the EU member countries must decide which government activities they will assign to the EU itself and hence to a supranational European institution. In other words, how much Europe is necessary for an economic unification?

The Maastricht Treaty of 1991 (Treaty on the European Union) seems to decide in favor of a strong decentralization of government functions. In order to calm down such Euro-skeptics as Denmark, Germany, and Great Britain, the "subsidiarity" principle of decisions was introduced into the treaty. This principle means that only those functions should be assigned to the EU center that cannot satisfactorily be fulfilled by the member states. However, taking a closer look, the meaning of the subsidiarity principle is rather empty. Its main purpose is to delegate the burden of proof to those member states that want to have a stronger centralization (see Sinn 1994). Aside from this, there is no operational criterion that can be used to decide which government activities should be assigned to the center and which tasks can still be placed in the hands of the individual member countries.

Contrary to the situation in long-established national federal states with rather rigid institutional structures, an optimal or less demanding – an economically reasonable – assignment of governmental functions could be realized in the EU.[2] The division of government tasks is still an open question after Maastricht and offers a real chance to Europe. It is therefore rather surprising that

[1] Padoa-Schioppa (1987) provides a comprehensive overview of the benefits of free trade in goods and services and an unconstrained migration of labor and capital.

[2] The German unification provides an example of how difficult it is to overcome a given assignment of government functions in long-established national federal states. The division of functions

the political discussion of how much Europe is necessary is lacking a foundation in terms of economic theory. Many contributions discussing that problem consist of long philosophical debates about normative legal principles and of rather artificial analogies between the competition of firms and regions. The purpose of the present book is to establish such an economic foundation.

1.1.2 Mobility and Taxation: Empirical Facts

In enhancing the mobility of goods, capital, and people, economic integration leads to an increased international mobility of tax bases. As many economists expect, this will imply a downward pressure on national tax rates and welfare benefits. Our objective in this section is to investigate if an increasing degree of mobility as well as lower taxes on mobile bases can actually be observed in existing federations.

For this purpose, we consider the development within two federations: the EU as a still-growing union of national states; and the United States as an existing, rather homogeneous federal state. Let us first turn to the EU. An interesting observation is that per-capita gross domestic product (GDP) levels have been converging among the twelve EU members since 1960, as Table 1.1 shows. This convergence cannot be explained by a single factor. However, besides the reduction of real income disparities due to EU transfer programs (such as the European Regional Development Fund and the European Social Fund), convergence can be taken as evidence that free trade in goods, capital, and labor in the EU – guaranteed by the Treaty of Rome – has had an effect.

Because subsequent chapters concentrate on the mobility of factors and its implications for tax policy, it is of particular importance to see how capital and labor mobility have changed over time. Table 1.2 indeed demonstrates that there is an increasing degree of capital mobility in the EU. A comparison of the growth of direct investments within the EU (intra) with the growth of those coming from (extra inward) or going outside (extra outward) the EU shows that capital mobility among member states has increased to a much larger extent than capital mobility between the EU and the rest of the world.

Most current data indicate that the level of intra-EU capital mobility rose further compared with extra-EU capital mobility. Owing to the increased attractiveness of the EU to other countries for direct investments, the ratio of intra- to extra-EU direct investments almost reached unity in 1995. This could be interpreted as the achievement of equal importance of direct investments from within and from outside the EU (Eurostat 1997a).

between the federal government and the old state governments has simply been extended to the relation between the federal government and the *Neue Länder,* although this unique historical event would have provided a chance to think about the division of tasks in more systematic terms and to establish a greater revenue autonomy for the state governments, which is an old yet unsolved problem in Germany.

Table 1.1. *Divergence of GDP per capita among the EU: GDP per capita relative to the EU average*

	1960	1970	1980	1990	1993
Belgium	97.5	101.1	106.4	104.9	106.2
Denmark	115.2	112.2	105.0	105.8	107.5
France	107.7	112.7	113.9	110.0	111.9
Germany	124.3	118.6	119.1	117.6	116.4
Greece	34.8	46.4	52.3	47.5	47.8
Ireland	57.2	56.1	60.2	69.0	71.6
Italy	86.6	95.5	102.5	102.8	104.0
Luxembourg	155.3	138.4	115.6	127.2	129.8
Netherlands	116.8	114.1	109.2	102.4	102.6
Portugal	37.2	46.9	52.7	53.7	58.1
Spain	58.3	72.2	71.7	75.4	77.2
United Kingdom	122.6	103.5	96.4	100.5	96.2
EU 12	100.0	100.0	100.0	100.0	100.0
Standard deviation	36.6	29.1	24.4	24.3	23.8

Notes: Per-capita GDP is given at current market prices per head of national population and in purchasing power parities. Figures for 1993 are estimated; figures for Germany refer to the former Western part.
Source: Commission of the European Communities (1993).

Table 1.2. *Growth in intra- and extra-EU direct investments*

	Average annual growth rate		Total growth
Investment	1984–89	1984–91	1984–91
Extra inward	35.3%	19.3%	344%
Extra outward	13.8%	6.0%	54%
Intra	51.6%	32.7%	724%

Sources and definition of investment: Eurostat (1991, 1994); see also Lejour (1995).

Considering tax policy during that time, Table 1.3 indicates that governments have lowered statutory overall corporate tax rates. Although there is no clear-cut interpretation of these developments, international tax competition might have been a driving force.

As far as labor mobility is concerned, individuals seem to be considerably less mobile than capital across EU member states. According to our own calculations (based on Eurostat 1993, 1995a, 1996),[3] annual mobility rates in 1991,

[3] As registrations of migratory flows within the EU are still not harmonized among the member states, data concerning this subject are very rough and hence subject to severe measurement

Table 1.3. *Statutory overall (national and local) corporate tax rates in the EU*

	1980	1985	1991	1992
Austria	61.5/38.3	61.5/38.3	39.0	39.0
Belgium	48.0	45.0	39.0	39.0
Denmark	37.0	50.0	38.0	38.0
France	50.0	50.0	34.0/42.0	34.0
Germany	61.7/44.3	61.7/44.3	56.5/44.3	58.6/46.0
Greece		49.0	46.0	46.0
Ireland	45.0	50.0	43.0	46.0
Italy	36.3	47.8/36.0	47.8/36.0	47.8/36.0
Luxembourg	45.5	45.5	39.4	39.4
Netherlands	46.0	42.0	35.0	35.0
Portugal	51.2/44.0	51.2/44.0	39.6	39.6
Spain	33.0	33.0	35.0	35.0
Sweden	40.0	52.0	30.0	30.0
United Kingdom	52.0	40.0	34.0	33.0
EU average	45.8	47.3	40.8	41.1
Standard deviation	8.6	7.3	7.1	7.8

Notes: Where two tax rates are given, the former reflects the tax rate on retentions, the latter the tax rate on distributions. Average and standard deviation are calculated on the basis of retained profits, excluding the new member states Austria and Sweden. No data available for Finland.
Sources: OECD (1992a) and author's calculations; see also Owens (1993).

1992, and 1994 (i.e., EU citizens moving into EU member states) are about 0.2% in terms of total EU population and thus one tenth to one fifteenth of the respective mobility rates in the United States (reported in Table 1.7).[4] It seems that returns of citizens to their home country and immigration into EU countries from outside the EU are more important than intra-EU mobility. About 50% of immigrants to Denmark, Greece, Spain, Ireland and the United Kingdom are of the respective country's own nationality. The number of Germans immigrating into Germany is also very high, though it is outnumbered by the even larger share of *Aussiedler* (native Germans) coming from Eastern Europe (Eurostat 1995c).

errors. Some countries provide no data on migration at all or only on foreigners or the labor force. This should be kept in mind when interpreting the calculated figure.

[4] When comparing the figures of the United States and the EU, please note the following. The EU mobility rate refers to the citizenship – that is, EU migrants into an EU member state do not have to come from another EU-member state but can also be EU nationals coming from abroad. In contrast, the U.S. figure indicates the mobility of the U.S. population independent of their nationality. Thus, the rates are truly comparable only if we assume that the largest share of U.S. movers are Americans and that most EU movers come from another member state.

Table 1.4. *Current expenditures on social security in EU member states as percentage of GDP*

	1970	1980	1990	1991	1992	1993	1994
Austria					28.2		30.2
Belgium	18.7	28.0	27.0	27.4	27.0	27.6	27.0
Denmark	19.6	28.7	29.8	31.0	32.0	33.2	33.7
Finland					35.4		34.8
France	18.9	25.4	27.7	28.4	29.2	30.9	30.5
Germany	21.5	28.8	26.9	28.8	30.1	31.0	30.8
Greece	7.6	9.7	16.1	15.7	16.3	16.3	16.0
Ireland	13.7	20.6	19.5	20.6	21.3	21.4	21.1
Italy	14.4	19.4	24.1	24.6	25.7	25.8	25.3
Luxembourg	15.6	26.5	22.1	23.3	23.5	24.9	24.9
Netherlands	19.6	30.1	32.2	32.4	33.0	33.6	32.3
Portugal	9.1	12.9	15.0	17.1	17.8	18.3	19.5
Spain	10.0	18.2	20.6	21.7	22.9	24.0	23.6
Sweden					40.0		
United Kingdom	14.3	21.5	22.7	25.3	27.0	27.8	28.1
EU average	17.4	24.5	25.4	26.6	27.8	28.4	28.2

Note: Figures for Austria, Finland and Sweden not included in calculating EU average.
Sources: Statistisches Bundesamt (1994, 1996), World Bank (1994), Eurostat (1995b, 1997b), author's calculations.

Straubhaar and Zimmermann (1993) report that a stock of about 13.4 million foreigners lived in the EU countries in 1989, which is a share of 4%. However, of these 13.4 million, 8.2 million came from outside of the EU (see also Zimmermann 1995). This could be attributed to income disparities, which are much higher between EU countries and neighboring nonmember states – in Eastern and South Eastern Europe as well as in North Africa – than among member states (see Table 1.1 and Wellisch and Wildasin 1996a). Take, for example, Turkey as a typical source country of labor migration and Germany as the basic host country of Turkish workers in the EU. For both countries, per-capita GDP at current market prices (in U.S. dollars) differ significantly from each other. In 1970, per-capita GDP was $274 in Turkey and $3.103 in Germany. Corresponding figures for 1990 are $2.679 in Turkey and $24.477 in Germany (United Nations 1976, 1995).

Table 1.4 demonstrates that expenditures on social security did not decrease in the EU between 1970 and 1994 but rather increased. This might be explained by the fact that EU member countries are not forced by mobility of individuals to drop social benefits. Because of low intra-EU mobility, no country fears becoming a welfare magnet. This observation points in the same direction as

Table 1.5. *Top central government marginal personal tax rates on earnings*

	1980	1986	1990	1991	1992
Austria	62	62	50	50	50
Belgium	72	72	55	55	55
Denmark	36.6	45	40	40	40
France	60	65	56.8	56.8	56.8
Germany	56	56	53	54	55
Greece	63	63	50	50	50
Ireland	60	60	53	52	52
Italy	72	62	50	50	50
Luxembourg	57	57	56	51.25	51.25
Netherlands	72	72	60	60	60
Portugal	84.4	61	40	40	40
Spain	56.5	66	56	56	56
Sweden	50	50	20	20	25
United Kingdom	60	60	60	40	40
EU average	62.5	61.6	52.5	50.4	50.5
Standard deviation	11.9	7.3	6.7	6.9	7.0

Notes: Data for the new EU member countries Austria and Sweden are not included in the EU-average and standard deviation calculations but are listed for informational purposes. No data available for Finland.
Sources: OECD (1992b) and author's calculations; see also Owens (1993).

the empirical study of Kirchgässner and Pommerehne (1996). This study shows that even the higher mobility of individuals among the *Kantone* in Switzerland – a country with a regional structure similar to that of the EU and with a population consisting of four different native-speaking groups (German, Italian, French, Raetho-Romanic) – does *not* induce regional governments to decrease the degree of interpersonal redistribution, a basic theoretical result derived in the literature.

Although these figures seem to suggest that mobility of individuals does not play a major role in the EU, there are some reasons to expect that migration will become (and even has already become) an important phenomenon in Europe. *First*, the Treaty on the European Union (Article 48) provides a legal basis for unrestricted migration of EU citizens among member countries. *Second*, different languages in the EU countries are more of an impediment to migration of low-skilled individuals than of high-skilled professionals. This might be why EU countries have reduced marginal personal tax rates on earnings at the top of the income scale, as Table 1.5 documents. The EU average decreased by more than ten percentage points from 1980 to 1992. The standard deviation

Table 1.6. *Divergence of real per-capita income in U.S. regions: Real regional per-capita income relative to U.S. average*

	1900	1990
New England	133.6	120.8
Mideast	138.6	115.8
Great Lakes	106.5	98.3
Plains	97.2	94.2
Southeast	47.9	85.6
Southwest	68.2	87.5
Rocky Mountain	145.2	89.8
Far West	163.3	109.0
United States (total)	100.0	100.0
Standard deviation	42.2	13.2

Notes: Real per-capita income is given in U.S. dollars at the 1982–84 base. Regional classifications according to the Bureau of Economic Analysis.
Sources: Barro and Sala-i-Martin (1995); author's calculations.

also dropped from 1980 through 1990, indicating that top marginal tax rates on earnings moved closer together during these years. From 1990 on, the standard deviation moved around 7, increasing only slightly.

Third, whereas the applications for EU membership by Finland, Sweden, and Austria were accepted rather quickly, that of Turkey has been delayed more or less indefinitely. Of course, many factors are important for decisions about EU membership. However, one fear expressed by existing members is that a full membership for Turkey would induce an uncontrolled influx of low-skilled workers from Turkey, such that countries like Germany would become welfare magnets (cf. the per-capita GDP disparity between these countries discussed previously). This fear might be why – besides its high preference for autonomy – Switzerland has refused to become an EU member state. A similar explanation applies to the Norwegian refusal of a full membership. Both countries, Switzerland and Norway, are at the top of the income scale among European countries and have extended systems of social welfare. *Fourth*, the United States is seen by some economists (Inman and Rubinfeld 1992) as a federal state, which describes the situation of a future fully integrated Europe. It would therefore be fruitful to look at the degree of convergence and mobility among the individual states in the United States.

As in the EU case, but to a far more pronounced extent, real income differences have vanished during the last decades. According to Table 1.6, real

Table 1.7. *Annual geographical mobility rates among the U.S. states for selected periods: Movers within the same state and from a different state as percentage of total population*

Mobility period	Same state	Different state
1949–50	3.0	2.6
1959–60	3.3	3.2
1969–70	3.1	3.6
1980–81	3.4	2.8
1990–91	3.2	2.9
1993–94	3.2	2.6

Source: U.S. Bureau of the Census (1995).

per-capita income in the Southeast was about 48% of the U.S. average in 1900, while incomes in the Far West and New England / Mideast exceeded the national average by more than 60% and 30%, respectively. Although there are still some income differences among states, Table 1.6 shows that these per-capita disparities have almost disappeared during the last 90 years, as can be seen by the enormous decline in the standard deviation.

Because there are no limits to interstate trade in goods or mobility of capital and people, it is not surprising that flows in capital and goods have diminished per-capita income differentials among U.S. states. However, and remarkably, migration seems to contribute far more than in Europe to an equalization of incomes across different regions in the United States. This can be seen by Table 1.7, showing significant annual migration rates among U.S. states. Mobility rates are of approximately the same size for movers within the same state as from a different state. If the development in the United States is taken as some herald of the situation in a more integrated Europe in the next century, migration will be important. Hence, the results derived in the following chapters, which hinge on a high degree of population mobility among regions, become empirically relevant for the EU, too.

1.2 Purpose, Justification, and Limits of the Study

1.2.1 Purpose of the Book

Within a uniform theoretical framework, this book aims to study the economic consequences of fiscal decentralization when the regions of a federal state are connected by a high degree of mobility. However, the study does not intend to consider all areas of government activities. Following Musgrave's (1959) division of government functions into three parts, the following analysis concentrates on the allocative and distributive branch of the government and leaves the stabilization function out of consideration.[5] The exclusion of the stabilization function in this book is not made because stabilization is unimportant. The idea is rather to appropriate the gains of a scientific division of labor by specializing on the first two functions. Furthermore, the analysis concentrates on problems of direct taxation. Problems of indirect taxation in a federal state (taxation of consumption, like the harmonization of VAT systems in the EU) are discussed very broadly in the literature and will be ignored in the following.[6] The basic question of the present study thus becomes:

> *Provided that regions are linked by high mobility of individuals and firms, is it possible to rely on a regional responsibility for the allocative and the redistributive branch of the government in order to achieve an efficient allocation of resources and the desired (optimal) distribution of income between poor and rich households?*

Of course, a number of contributions have already studied elements of this question.[7] Hence, a further analysis of these problems must be defended, and it will be justified by the following arguments.

1.2.2 Justification of the Study

First, the present study takes a closer look at the many different and often inconsistent views about the benefits and problems of decentralizing government activities, and it derives the conditions under which they are true.

Advocates of a stronger decentralization argue that the degree of interregional household mobility is a decreasing function of the size of the regions. Because they can emigrate, individuals can force self-serving regional politicians to take their preferences into account (McLure 1986). A high degree of

[5] In doing so, the present study follows the recent textbook literature on public economics. See e.g. Atkinson and Stiglitz (1980), Tresch (1981), Boadway and Wildasin (1984), Stiglitz (1986), Starrett (1988), Richter and Wiegard (1993), and Myles (1995). Oates (1972) analyzes in great detail the question of how to divide the stabilization task among governmental levels. More recent contributions on this problem are von Hagen (1992) and Eichengreen (1993).

[6] See e.g. Wiegard (1980), Berglas (1981), Keen (1983), Mintz and Tulkens (1986), Keen (1987, 1989), Crombrugghe and Tulkens (1990), Sinn (1990), Haufler (1993), Lockwood (1993), Smith (1993), Keen and Lahiri (1994), Lockwood, de Meza, and Myles (1994a,b), Keen and Smith (1996), and Richter (1999).

[7] An important monograph studying this problem is Oates (1972); Wildasin (1986) provides a comprehensive survey on many of the issues involved. Further interesting surveys can be found in McLure (1986), Rubinfeld (1987), Wildasin (1987), and Sinn (1994).

interregional mobility can improve efficiency in the governmental sector in the same way as the mobility of labor and capital improves the resource allocation in the private sector of the economy.

In contrast to that view, authors like Musgrave (1971), Buchanan and Goetz (1972), Oates (1977), Gordon (1983), Wildasin (1991), Inman and Rubinfeld (1992), and Sinn (1994), among many others, derive various distortions of decentralized government decisions. They argue that, in many cases, decentralization of government activities leads to an inefficient allocation and to a suboptimal income distribution. Regional governments neglect the well-being of individuals living in other regions and thus cause interregional externalities.

These different views can partly be explained by their reliance on equally different perceptions of how policy making works; also, some assertions are derived from a theoretical framework while other claims are based on rather vague analogies between the competition of firms and of regions (McLure 1986, p. 344; Tiebout 1956, p. 423).[8] Even for those claims derived from theoretical models, it is often not clear whether they apply only to situations with perfect competition for mobile factors among small regions, or if they apply also to larger regions like the EU member countries. In order to compare the benefits and problems of fiscal decentralization, it is necessary to derive all conclusions from a consistent theoretical framework.

The second, more important justification of this analysis is to derive some novel results and to present selected topics of recent research. Of course, this selection reflects a personal view of influential areas and includes the following routes of research.

(1) This book analyzes the policies of local governments in great detail. Since the taxation of mobile individuals and firms causes locational distortions that are specific to the local level, it is worth deriving a second-best taxation theory for local governments. Following Wellisch and Hülshorst (1999), among others, this study thereby extends optimal taxation results to the local level.

(2) The problem of interregional tax competition for a mobile tax base like capital has attracted great attention by the contributions of Wilson (1986) and Zodrow and Mieszkowski (1986a). Edwards and Keen (1996) have extended this analysis to study whether interregional tax competition is a method to put the Leviathan in his place.

(3) The determination of the optimal territorial structure of a federal state has regained interest by the study of Hochman, Pines, and Thisse (1995). They argue that the famous principle of *fiscal equivalence* developed by Olson (1969) – having one layer of government for each public good – neglects one basic

[8] The rather intuitively derived assertion made by Tiebout (1956) that the local supply of public goods ensures an efficient allocation has been rigorously examined by many authors in the last decades, including McGuire (1974), Berglas (1976), Bewley (1981), Stahl and Varaiya (1983), and Scotchmer and Wooders (1987).

condition of an efficient allocation. Local governments must have the correct incentives to choose an efficient allocation in their own interest. With high mobility of individuals among jurisdictions, only metropolitan governments supplying all necessary local public goods to their citizens have the correct incentives.

(4) Myers (1990b), Krelove (1992), Henderson (1994), and Wellisch (1994, 1995a) have derived that perfect interregional household mobility takes away all incentives of (large) regions to behave strategically with regard to neighboring regions. This might call into question some widely accepted views about the failure of decentralized government activities, summarized by Gordon (1983).

(5) Wildasin (1991, 1992) has analyzed the redistribution policies of regional governments in great detail and has derived a central government intervention that ensures an optimal income distribution among individuals and additionally avoids migration distortions.

(6) Another widely held view in the literature (see e.g. Gandenberger 1981) is that a decentralization of government activities does not properly take into account the interests of future generations compared to a central solution. Children and parents usually live in the same country but need not live in the same state, province, or community. Hence, parents cannot influence the well-being of their children by participating in the regional political process. Contrary to this opinion, Wellisch and Richter (1995) and Oates and Schwab (1996) show that high interregional household mobility provides an incentive mechanism to take the preferences of generations living in future periods in the region into account, since migration decisions affect the rents to local property. A regionalization of government activities may therefore better protect the interests of future generations.

(7) Although the informational advantage of decentralized decision making has always been one of the central arguments in favor of fiscal decentralization (Oates 1972), the literature has only recently developed analytical frameworks that encompass issues of asymmetric information between regions and the central government. This literature borrows from contributions on adverse selection and efficient income taxation (e.g. Stiglitz 1982) and from the literature on incentive problems (Laffont and Tirole 1993). Raff and Wilson (1997), Baumann and Wellisch (1998), and Bucovetsky, Marchand, and Pestieau (1998), among others, show that a central government intervention facing such informational constraints cannot achieve an optimal allocation when regional decisions fail to do so.

In summary, the basic justification of this book is to update the discussion on fiscal decentralization and to derive the conditions under which these insights – which are sometimes inconsistent with the traditional view – hold.

1.2.3 Limits of the Study

In trying to give an answer to the central question of this book (displayed in Section 1.2.1), this study concentrates on theoretical contributions to the literature – mainly on research areas of the author and the related literature. It should be mentioned, however, that there are further important fields of ongoing research in local public finance which this book cannot consider in detail. It has already been emphasized that issues of stabilization policy and of indirect taxation will be excluded from the main text. Moreover, a voluminous research field in local public finance concerns the problem of how to model public choice mechanisms at the local level. We shall solve this problem in a rather simple way in order to concentrate on incentive problems caused by fiscal decentralization. What is not considered in detail in this book are voting models (see Rubinfeld 1987; Wildasin 1986, 1987). Finally, this book excludes empirical issues. However, it is important to note that it is just the large number of jurisdictions in federal states that has provided a broad data basis for cross-sectional analysis and has thus formed the basis of intensive and ongoing empirical research in this area.[9]

Given the central question of this book – to find out whether a decentralization of taxation and spending decisions can achieve an efficient allocation and a fair income distribution – these omissions seem to be innocuous on the following grounds. First, the government's stabilization branch is excluded in order to concentrate on efficiency and distributional issues. Second, as many texts explain (see e.g. Boadway and Wildasin 1984; Rosen 1995), voting models predict that governments choose an inefficient provision of public goods even in a closed economy. Hence, all the more can an efficient supply of public services not be expected when jurisdictions are connected by mobile individuals. Therefore, in order to not exclude the possibility that regions choose an efficient allocation right at the beginning, this book relies on very simple population structures and omits difficult public choice problems. This allows us to trace distortions of decentralized decisions back to regional incentive problems, which a central government does not have. Finally, this study intends to provide a theoretical and not an empirical analysis of the economic consequences of fiscal decentralization.

It is also important to say that this theoretical analysis abstracts from country-specific institutional aspects. Although European integration and German unification have been important developments for this study, it tries to be a general

[9] Oates (1969), Bergstrom and Goodman (1973), and Oates (1985) are three path-breaking contributions to important areas of empirical research: tests of the Tiebout hypothesis, estimates of the demand for local public goods, and tests of the Leviathan hypothesis of governments.

one that can be applied to all federal states.[10] The subsequent analysis often uses the rather general term *region*. However, its interpretation depends on the model used and the specific problem which is examined. If the study concentrates on small regions, then the model can be applied to the local level and questions of local government behavior are studied. If the analysis considers larger regions where some kind of strategic behavior is possible, then regions can be interpreted as *Bundesländer* in Germany, as states in the United States, or as member countries of the EU. The meaning of the expression *central* or *national government* also depends on the intended application. If the model refers to a national federal state then it stands for the federal government, while in the EU case it denotes some supranational institution like the EU commission. Models with perfect household mobility are appropriate depictions of homogeneous national federal states like Germany or the United States, whereas setups that model attachment of households to home as some kind of imperfect mobility describe the situation of the member states in the EU or the provinces in Canada.

Before we provide an overview of the study, it is instructive to compare the basic benefits and problems of decentralized fiscal policy at a more systematic level than we have done so far.

1.3 Benefits of Fiscal Decentralization

1.3.1 Sensitivity to Diverse Regional Preferences

In the eyes of many economists, the benefits of decentralizing government activities dominate.[11] Probably the best-known advantage is that regional governments, being closer to the people, may better reflect individual preferences. Any governing independent of the citizens' tastes should be avoided, and central government decisions often suffer from a lack of sensitivity to diverse regional preferences. The problem is that the provision of public goods almost always requires compromises. Some citizens prefer expanded and high quality programs of public goods, while others would like to have smaller public budgets and less taxation. Such a compromise is unavoidable for truly national public goods, like national defense, which are consumed by all citizens of a federal state. However, there are many local public goods that can only be consumed in the region where they are offered, and the preferences for these public goods may differ interregionally. In this case, there is at least a partial solution to the

[10] Padoa-Schioppa (1987) for the European integration and Sinn and Sinn (1992) for the German unification are interesting studies that also take institutional problems into account.

[11] Oates (1972), McLure (1986), and Siebert (1991), among others, discuss various advantages of decentralizing public expenditure and taxation decisions.

problem when regional governments provide such public goods. A revelation of preferences for local public goods is more likely when regional residents themselves vote for the supply of public goods they consume. In contrast to this, a provision of local public goods by the center tends to offer all regions the same amount and the same quality of public goods (see e.g. Oates 1972; Boadway and Wildasin 1984). This causes efficiency losses.

1.3.2 Preference Revelation by Household Mobility

A further important benefit of decentralized government decisions is based on the high interregional mobility of households. Similar to the closeness of regional governments to their citizens, the mobility of households helps to reveal the preferences of regional residents for local public amenities. Governments face a fundamental problem when deciding on the provision of public goods. Assuming they are interested in the welfare of their citizens, how can they disclose their preferences for different tax–expenditure bundles? Consumers are not interested in revealing their true willingness to pay and so may take on a "free rider" position, since they cannot be excluded from the consumption of public goods. Tiebout (1956) offered an ingenious idea as a solution to this fundamental question: he argued that the problem can be solved by a local provision of public goods. Mobile households vote with their feet and choose their region of residence where the combination of local public goods and taxes best reflects their preferences. Such spatial arbitrage behavior of households results in some kind of market solution for an efficient supply of local public goods. This preference revelation process can be thought of as follows. A higher provision of local public goods in a region attracts mobile households, who compete for jobs and housing in the region. This reduces regional wages and increases regional housing rents until the reservation utility of mobile households has been reached once again in that region. The changes in regional wages and housing rents therefore reveal the preferences of mobile households for the higher supply of local public goods and cause an increase in the value of such regional property as land, buildings, or firms. When regional governments take into account the effects of their decisions on local property values, they (are forced to) internalize the willingness to pay of mobile residents.

1.3.3 Protecting the Interests of Future Generations

It is widely unrecognized that this mechanism may also induce regional governments to take into account the interests of future generations living in the region. Let us consider, for example, the emissions of long-lived local pollutants like toxic waste, which are controlled by a local environmental agency.

Any increase in today's emissions worsens the environmental situation in future periods. This causes emigration of residents, who would otherwise live in future periods in the region, until the remaining local residents can again receive their reservation utility level due to a reduction in housing rents or an increase in wages. The changes in housing rents and wages reflect the marginal willingness to pay of future generations to avoid current emissions. By capitalization, the future drop in the return to local property causes a fall in the current value of local property. Any such decrease reveals the preferences of future generations for a clean environment. If the local environmental agency takes into account the changes in the value of local property, it is forced to internalize any long-lasting effects of current emissions generated in the region. Hence, even in the absence of altruistic motives, the interests of future generations are protected by internalizing their marginal willingness to pay for a decrease in today's emissions. Tiebout's hypothesis that migration responses reveal the preferences of mobile households for local amenities is also true in an intergenerational context. This revelation of preferences does not work at the central level since its driving force is the mobility of households across regions, and the degree of household mobility decreases with the size of the jurisdiction. It is therefore possible that a decentralization of (some) government activities not only facilitates the revelation of preferences for public goods today but also better protects the interests of future generations than a more centralized system.

By the same line of argument, decentralization might also be a way to prevent excessive public debt finance of current government expenditures at the expense of future generations. Any shift in the tax burden to future generations living in a region due to debt finance will be answered by emigration of these households. This response will lower the rents of local property in future periods and therefore the current value of local property as well. This capitalization at least takes away the incentives for excessive debt finance and for other forms of intergenerational redistribution like public pension payments on a pay-as-you-go base.

1.3.4 Restraining the Leviathan

The benefits listed so far have considered a world with benevolent governments seeking to maximize the welfare of their constituents. There exists, however, also a radically different perception of how policy making works. According to this view, governments (whether local or national) are intrinsically untrustworthy revenue maximizers, and tax competition between jurisdictions serves a valuable purpose. Investors choose to invest their capital in low-tax jurisdictions, decreasing the tax base when Leviathan-type governments try to maximize revenues by choosing inefficiently high tax rates. Since capital is more mobile among smaller jurisdictions in a federal state than among countries, any decentralization of government functions serves to restrict the taxing power of governments that are unconcerned with the welfare of residents. Hence, decentralization and competition may be institutionally efficient and can be seen as objectives in their own right. As with decentralization and competition in the private sector of the economy, competition among governmental units forces self-interested governments to take the utility of their constituents into account and thereby improve the conditions for socially efficient public taxation and expenditure decisions (Brennan and Buchanan 1980; McLure 1986). This perception of how policy measures are chosen has become increasingly influential during the last decade. Several European government administrations – most notably, the British government – opposed an EU coordination of taxes since a single European market would cause downward pressure on tax rates, and this helps to restrict built-in pressures for increased public expenditure and taxation (U.K. Treasury 1988).

1.4 Problems of Fiscal Decentralization

First, it is important to note that regional governments in principle face the same problems that a central government must solve. Public goods affect the interests of many persons, and public decision makers must reveal the preferences of their citizens. Since regional governments are closer to the people and households can vote with their feet among several regions, this problem could be better solved by a decentralized system. Moreover, in order to finance public services and to design their redistribution programs, governments must collect taxes that should leave private economic decisions as undistorted as possible. This is true on the regional level as well as on the central level. However, an analysis that aims to consider issues of decentralized fiscal policy should emphasize such problems that are specific to regional decisions aside from these more general problems. In particular, additional problems for regional decision making arise because regions are open with respect to other regions.

1.4.1 Inefficient Interregional Resource Allocation

One aspect of this openness is that households, firms, and capital are mobile among the individual regions of a federal state. However, their interregional allocation cannot be arbitrary if an efficient allocation is to be achieved. The locational pattern must meet conditions that characterize an efficient allocation across regions. Since locational choices of private households and firms are influenced by the provision of public services and by the collection of taxes, a first important problem arises. Do regional governments have incentives to choose their taxes and their expenditures on public goods and transfers in such a way that these instruments do not distort the interregional allocation?

1.4.2 Destructive Tax Competition for Mobile Factors

The second problem is closely related to the first one. Regions compete for mobile households and mobile firms by providing public services with the objective to increase the welfare of their residents. It is often feared that regions therefore provide local public goods and factors strategically in order to gain locational advantages over their neighbors. For example, a regional government might underprovide local public goods in order to restrict immigration of households if new residents would increase the costs of providing a certain level of public services. Or it might overprovide local public infrastructure in order to increase local wages and tax revenues by attracting mobile firms. Here, the following question arises: Under what conditions do regions supply public services in a socially efficient way when they follow region-specific objectives and take locational responses of mobile households and firms to their own actions into account? Have regions any incentives to distort the provision of public services in order to gain locational advantages?

The problem of an *interregional tax competition* for a scarce mobile factor is widely discussed in the literature, and it can directly be traced back to the problem just described.[12] In order to explain the essence of the problem, let us suppose that the provision of local public goods must be financed by a tax on a highly mobile factor like capital. When providing public goods, a single region must take into account two cost factors. The first one is the normal income loss for private households, a consequence of the redistribution of resources from the private sector to the government. However, if capital is taxed too much then it will leave the region, and this decreases local wages and tax revenues. This is the second cost component from the viewpoint of a single region. Each region will therefore try to avoid the capital flight by choosing rather low capital tax rates, thus leading to an inefficiently low supply of public goods.

The problem of interregional tax competition can also be explained by standard externality theory. If a region levies a tax on a mobile factor such as capital, this tax base leaves the region and increases the tax base elsewhere. Thus, the taxing region causes a positive *fiscal externality* to other regions and consequently chooses an inefficiently low level of the externality-producing activity – that is, too low tax rates and thus inefficiently low levels of local public goods. This fiscal externality arises even in small regions lacking any power in the interregional capital market; larger regions cause an additional external effect when taxing capital. Since they can influence the interregional interest rate by choosing their capital tax rate, larger regions behave strategically in order to

[12] The basic feature of the problem has already been described by Oates (1972, pp. 142–3). A more formal treatment of the problem of interregional tax competition can be found in Wilson (1986) and Zodrow and Mieszkowski (1986a).

increase the regional income. A net capital exporter, for example, will tax capital at low rates in order to increase the demand for capital and thereby drive the interest rate up. This causes a negative *pecuniary externality* on regions that are net capital importers, since their interest liabilities increase. Consequently, the supplied amount of local public goods is further biased downward.

1.4.3 Tax Export and Spillover Effects

Aside from the interregional competition for a scarce mobile tax base, there are two other well-known sources of an inefficient provision of public goods by regions: the interregional export of taxes and interregional public good spillover effects. These phenomena also arise because regions are open.

In the case of an interregional tax export, regions can partly shift taxes to nonresidents. While the benefits of supplying local public goods are internalized by the residents of a region, the costs are partly borne by residents of other regions. As a consequence, an inefficiently high supply of local public goods must be expected. Well-known examples are (a) the source-based taxation of land rents when land is partly owned by nonresidents, and (b) origin-based consumption taxes that increase the consumer price of regional products that are also bought by nonresidents. An example of an international tax export is the origin-based taxation of internationally traded goods, such as the future VAT system in the EU. Tax revenues are collected by the country where goods are produced, yet the tax burden is shifted to residents of countries where goods are consumed. Typical exporting countries shift their tax burden to consumers living in typical importing countries and have incentives to overexpand activities financed by these taxes.

If nonresidents cannot be excluded from the consumption of public goods provided by a region, then a spillover problem arises. In contrast to an interregional export of taxes, here the costs of providing public goods are internalized by a region while the benefits (partly) flow out. Examples are sewage treatment by an upstream city (reducing the need for purification by downstream cities) and the benefits from education provided by one jurisdiction that may be enjoyed by households elsewhere if educated individuals decide to relocate. As a consequence, the provision of public goods will be too low from a social point of view. This problem also arises with reversed signs, as when nonresidents suffer from regional pollution.

1.4.4 Suboptimal Income Distribution within Regions

In addition to supplying public goods, the government also has the function of redistributing income between rich and poor households in order to achieve a fair income and wealth distribution. The basic problem of decentralized redistribution policy is that a region must take into account the migration responses to a transfer program. To make the problem intuitively transparent, let us suppose that a single region increases its transfer payments to all low-income households living within its boundaries, and that the region finances this program by collecting higher taxes from its high-income residents. From the viewpoint of the single region, the costs of this redistribution program are rather high, since poor households from neighboring regions are attracted to – and rich residents are repelled from – the region. In other words, the regional redistribution program leads to some kind of adverse selection. One can therefore expect that the assignment of the redistribution branch to regions would result in a suboptimally low degree of income redistribution.[13] However, a suboptimally low level of redistribution between rich and poor households is not the only problem. Moreover, regions will levy different taxes on mobile high-income residents and provide different transfer payments to low-income households. This causes pure fiscal incentives to relocate, resulting in migration distortions.[14] If the redistribution function is assigned to the central government, then neither problem arises. Migration responses are much lower at the national level, and migration distortions can be avoided by choosing identical tax rates and transfer levels across all regions of the federal state.

If, however, intergenerational redistribution (e.g., excessive public debt finance) is seen as undesirable because future generations must bear the tax burden without being asked to do so, fiscal decentralization of the redistribution branch can also be beneficial.

1.4.5 Suboptimal Income Distribution across Regions

It seems to be obvious that regional governments who are interested in the welfare of their own residents have hardly any incentives to redistribute income toward other regions, since this would imply a decrease in consumption for their constituents. As intuitive as this argument might be, it resists a rigorous analysis only if individuals are unable to move across regions. However, individuals are typically free to move in a federal state. For instance, the citizens of any one region in the EU have access to the labor market of – and receive the same fiscal treatment in – any other region; this is legally guaranteed in Article 48 of the EU treaty. Therefore, even a rationally acting government that considers the welfare of only its own constituency must take migration responses to its policy into account. This may imply voluntary interregional transfers to poorer regions in order to restrict immigration and thus to avoid a drop in per-capita income of

[13] This expectation is the prevailing view. It is advocated by Musgrave (1971), Oates (1972, 1977), Brown and Oates (1987), Wildasin (1991), and Sinn (1994). See Cremer et al. (1995) for an overview on various redistribution studies.

[14] This problem is underlined by Musgrave (1971), Wildasin (1991), Burbidge and Myers (1994a), and Wellisch (1996).